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A PUSH-TO-TALK TV ON-LINE ACCESS SYSTEM

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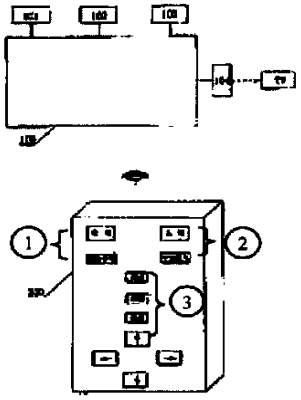
Claims:	2 pages
Description:	7 pages
Attached drawings:	4 pages

Abstract

A push-to-talk TV on-line access system, which is composed of a conversion interface device with an interface for a network access facility and an interface for a television and a remote control unit capable of data communications with the conversion interface device, operated in a push-to-talk mode, wherein when the "On-line" key is pressed down using the remote controller, connection to the internet can be accomplished; meanwhile, a pre-set classification of home pages is displayed on the television, and the home page to access is

specifically selected through selection in an editing operation; because the accessible home pages described are organized through a tree structure, the content of the accessible network is controllable; meanwhile, new website addresses can be added and stored as a supplement, thus making it possible for the internet to go into every home through the television.



Key: 1 Television
English alphabet
2 Getting on-line
Chinese Input
3 Exit
Return
Confirmation

Claims

1. A push-to-talk TV on-line access system, which is characterized by the fact that it is composed of a conversion interface device with an interface for a cable TV line, an interface for a telephone line or wireless reception interface and various kinds of interfaces, and a remote control unit capable of data communications with the described conversion interface device, and in the described conversion interface device, there is a video/radio output port for connection to a television, and the described conversion interface device is composed of a CPU and a remote control reception unit that is connected to the input port of said CPU, the described CPU is linked with a memory unit, and the input/output ports of the described CPU are respectively connected through their respective modules to the interface of the cable TV line, the interface of the telephone line or the wireless reception interface, and meanwhile, are connected through a digital (IP)/video (TV) conversion unit to the television connection port, and upon receipt of a

signal from the remote control, the described conversion interface device executes the following steps: Analyzes the command of the remote controller, displays an initial picture if it is an "on-line" command, establishes connection to the main website through the interface of the cable TV line, the interface of the telephone line or the wireless reception interface and various kinds of interfaces and converts the home page of the main website to signals that the television is capable of displaying, and sends them to the television through the video/radio interface; if it is a confirmation command, it then sends the website that the current position of the cursor corresponds to through the interface of the cable TV line, the interface of the telephone line or the wireless reception interface and various kinds of interfaces to the internet; and if it is an editing command, it then moves the position of the cursor in accordance with the content of the command and connects the website link that the cursor corresponds to after moving and sending the website to which the current position of the cursor corresponds through the interface of the cable TV line, the interface of the telephone line or the wireless reception interface and various kinds of interfaces to the internet, and exchanges information with the internet through the interface of the cable TV line, the interface of the telephone line or the wireless reception interface and the various kinds of interfaces described.

2. A push-to-talk TV on-line access system as described in Claim 1, which is characterized by the fact that the home page on the described main website is directed to the link to the home page of the next stage in accordance with a certain rule of classification and arranged in sequential order.

3. A push-to-talk TV on-line access system as described in Claim 1, which is characterized by the fact that the home page of the next stage linked with the described main website is directed to the link to the home page of the next stage in accordance with a certain rule of classification and arranged in sequence, and analogously with this until entry to the required website.

4. A push-to-talk TV on-line access system as described in Claim 1, which is characterized by the fact that the home page address of the described main website can be pre-stored or added to the memory unit of the described conversion interface device.

5. A push-to-talk TV on-line access system as described in Claim 1, which is characterized by the fact that the described remote controller includes a save key, and when said key is pressed down, the current website will be saved in the memory unit by the conversion interface device, and can be called directly from the memory unit during the next access.

6. A push-to-talk TV on-line access system as described in Claim 1, which is characterized by the fact that the described remote controller also includes a "television" function key, and when said key is pressed down, the connection to the website will be switched off by the described conversion interface device so that the television (TV) working mode is restored.

7. A push-to-talk TV on-line access system as described in Claim 1, which is characterized by the fact that the described remote controller also includes font/Chinese character input keys.

8. A push-to-talk TV on-line access system as described in Claim 1, which is characterized by the fact that the described editing command is composed of upper, lower, left, and right keys, last page and next page commands and return to the home page and keys set up in accordance with the actual need.

Description

The present invention relates to the technology of network interfaces and television, and more specifically, to a system that can greatly simplify the access operation to the internet through a television.

The internet is becoming increasingly correlated with living and work, and in order to accomplish access to the internet through a television with existing technology, in addition to the requirement of the hardware of an set-top box on the top of the television, in the process of use the user is also required to memorize a series of complicated steps of operation, thus making it impossible for those lacking knowledge of computers or those that are less educated to access the internet conveniently.

The objective of the present invention is to provide a one push-to-talk television on-line access system to access the internet through television. With this push-to-talk television on-line access system, the above-mentioned disadvantages of the existing technology can be overcome. Using this system to get on line, the steps of operation can be greatly simplified, thus allowing networked life to really go into many thousands of homes.

The objective of the present invention is accomplished in such a way that constructed there is a push-to-talk television on-line access system, which is composed of a conversion interface device with an interface for a cable TV line, an interface for a telephone line or wireless reception interface and various kinds of interfaces, a remote control unit capable of data communications with the described conversion interface device, and in the described conversion interface device there is a video/radio output port to connect to the television, and the described conversion interface device is composed of a CPU and a remote control reception unit that is connected to the input port of said CPU, the described CPU is linked with a memory unit, and the input/output ports of the described CPU are respectively connected through their respective modules to the interface of the cable TV line, the interface of the telephone line or the wireless reception interface, and meanwhile, are connected through the digital/video conversion unit to the television connection port, and upon receipt of a signal from the remote control, the described conversion interface device executes the following steps: analyzes the command of the

remote controller, displays an initial picture if it is an "on-line" command, establishes connection with the main website through the interface of the cable TV line, the interface of the telephone line or the wireless reception interface and various kinds of interfaces and converts the home page of the main website to signals that the television is capable of displaying, and sends them to the television through the video/radio interface; if it is a confirmation command, it then sends the website that the current position of the cursor corresponds to through the interface of the cable TV line, the interface of the telephone line or the wireless reception interface and various kinds of interfaces to the internet; and if it is an editing command, it then moves the position of the cursor in accordance with the content of the command, and connects the website link that the cursor corresponds to after moving and sending the website to which the current position of the cursor corresponds through the interface of the cable TV line, the interface of the telephone line or the wireless reception interface and various kinds of interfaces to the internet, and exchanges information with the internet through the interface of the cable TV line, the interface of the telephone line or the wireless reception interface and the various kinds of interfaces described, wherein, each displayed information item and data item is temporarily pre-stored in the memory of the conversion interface device.

A push-to-talk television on-line access system as provided in accordance with the present invention, which is characterized by the fact that the home page on the described main website is directed to the link to the home page of the next stage in accordance with a certain rule of classification and arranged in sequential order.

A push-to-talk television on-line access system as provided in accordance with the present invention, which is characterized by the fact that the home page of the next stage linked with the described main website is directed to the link to the home page of the next stage in accordance with a certain rule of classification and arranged in sequential order, and analogously like this until entry to the required website.

A push-to-talk television on-line access system as provided in accordance with the present invention, which is characterized by the fact that the home page address of the described main website can be pre-stored or added to the memory unit of the described conversion interface device.

A push-to-talk television on-line access system as provided in accordance with the present invention, which is characterized by the fact that the described remote controller includes a save key, and when said key is pressed down, the current website will be saved in the memory unit by the conversion interface device, and can be called directly from the memory unit during the next access.

A push-to-talk television on-line access system as provided in accordance with the present invention, which is characterized by the fact that the described remote controller also

includes a "television" function key, and when said key is pressed down, the connection to the website will be switched off by the described conversion interface device so that the television (TV) mode is restored.

A push-to-talk television on-line access system as provided in accordance with the present invention, which is characterized by the fact that the described remote controller also includes font/Chinese character input keys.

A push-to-talk television on-line access system as provided in accordance with the present invention, which is characterized by the fact that the described editing command is composed of upper, lower, left, and right keys, last page and next page commands and return to the home page, and each described editing command corresponds to a key on the remote controller.

Execution of the present invention of the push-to-talk television on-line access system offers the following advantages: with operation in a push-to-talk mode, when the "On-line" key is pressed down through the remote controller, connection to the internet can be accomplished; meanwhile, the pre-set classification of home pages is displayed on the television, and the home page to access is specifically selected through selection in the editing operation; because the described accessible home pages are organized through a tree structure, the accessible content of the network is controllable; meanwhile, new website addresses can be added and stored as a supplement. Execution of the system of the present invention enables entry of the internet into every home through the television.

The following is a further description of the characteristics of the present invention, in association with the attached drawings and embodiments, and of the attached drawings:

Figure 1 is a simple sketch of an embodiment of the push-to-talk television on-line access system of the present invention;

Figure 2 is a block view of the composition of the conversion interface device in the push-to-talk television on-line access system of the present invention;

Figure 3 is a block view of the composition of the remote controller in the push-to-talk television on-line access system of the present invention;

Figures 4–8 are schematic diagrams of the process of access to the internet using the push-to-talk television on-line access system of the present invention.

As is shown in Figure 1, the push-to-talk television on-line access system of the present invention is composed of two parts, the hardware and the software, wherein the hardware part is composed of a conversion interface device 100 and a remote controller 200, and the two are associated, mainly to solve the problems of network access, interactive dialog, and data storage; and associated with the software, the specific functions accomplished include: 1) to provide access to a gateway website in the internet through a telephone line, cable TV broad band, or

wireless access and various ways of internet access, and or to provide the function of access to several central websites; 2) to pre-store the addresses of other websites or store addresses of additional new websites; and 3) entry to a specific web page for corresponding browsing through simple directional operation, and in accordance with searching of the website.

1. The conversion interface device

As is shown in Figure 1, the conversion interface device 100 is composed of a cable TV line interface 101, telephone line interface 102 or wireless reception interface 103 for connection to the internet, and it is also composed of a video/radio output port 104 for connection to a television; as is shown in Figure 2, the conversion interface device is also composed of a CPU 201 and a remote control reception unit 202 that is connected to an input port of said CPU 201, the described CPU is linked with a memory unit 203, and the input/output ports of the described CPU 201 are connected through a conversion unit 204 to the cable TV line interface 101, through a conversion unit 205 to the telephone line interface 102, through a conversion unit 206 wireless reception to the interface 103, and through a digital/video conversion unit 207 to the television connection port 104.

2. Remote controller

The remote controller is an important link in the system of the present invention to accomplish interactive dialogue, and it is used for sending a user instruction to the conversion interface device. This interface device for data communications with the conversion interface device, as is shown in Figure 3, is set with a key 301, an infrared transmission unit 302, a CPU 303 and a memory unit 304 and a battery power supply unit 305; and the key unit 301 is composed of 1) functional indication keys such as "On-line", "TV", etc.; 2) mode switch keys, such as "Alphabet", "Chinese characters", "Exit", "Return", etc.; 3) screen editing keys, such as "←", "↑", "→", and "↓", etc. When connected to the working power supply, after one of the keys on the panel has been pressed down, the CPU will, based on the position of the key pressed down, retrieve the corresponding code from the memory unit, and transmit it through the infrared transmission unit.

3. Software

Through the software on the conversion interface and the remote controller, the system of the present invention can perform the following functions.

(1) The mode switch

When the conversion interface device receives the signal of the "On-line" command from the remote controller, it will display an initial picture as shown in Figure 4, and through the interface of the cable TV line, the interface of a telephone line or the interface of wireless reception and various kinds of interfaces, set up for connection with a major website and convert the home page of the major website to signals that can be displayed on the television, send them to the television through the video/radio interface, and display them on the television.

When the conversion interface device receives the signal of the "Television" command from the remote controller, it will switch off the connection to the internet, so that the television returns to the "Radio Frequency" or "AV" mode before accessing the internet.

(2) Network access functions

A) Screen editing command

There is a process of searching for a target in network access, and this process is accomplished through pressing down a screen editing directional command on the remote controller, here mainly through the up arrow, down arrow, left arrow, and right arrow, in association with the content displayed on the screen. When the conversion interface device receives the signal of the screen editing command from the remote controller, it will then move the position of the cursor in accordance with the content of the command, and connect the website link to which the cursor corresponds after moving and send the website to which the current position of the cursor corresponds through the interface of the cable TV line, the interface of the telephone line or the wireless reception interface and various kinds of interfaces to the internet, and exchange information exchange with the internet through the interface of the cable TV line, the interface of the telephone line or the wireless reception interface and the various kinds of interfaces described.

B) Site, page return command

When the "Return" key on the remote controller is pressed down to give the command to return to a site or a page, it will go back to the previous page or the previous website.

C) Access confirmation command

For selecting access options on the screen through the remote controller, to select completion, press down the "Confirmation" key on the remote controller, and after the conversion interface device identifies the confirmation command, it will send the website to which the existing position of the cursor corresponds to the internet through the interface of the

cable TV line, the interface of the telephone line or the wireless reception interface and various kinds of interfaces.

4. Internet support

In order to accomplish the functions of the system of the present invention, the design of an internet support system is required. First, it requires a top-level website home page, on which the website can be classified into two types, a domestic website and a foreign website. In other words, the top-level web page is arranged in accordance with the domestic and foreign with a link directing to the domestic website and a link directing to a foreign website. And the home page on the website (page) of each other level is arranged in accordance with a certain rule of classification and in sequence with a link directing to the home page of the next level. The home page of the next level linked by a described major website is arranged in accordance with a certain rule of classification and in sequence with the link directing to the home page of the next level, and analogously with this until entry to the required website. In this, the address of the home page of the top-level major website can be pre-stored or added in the memory of the described conversion interface device.

5. Others

A save key may also be set up in the remote controller, and when said key is pressed down, the current website will be saved in the memory unit by the conversion interface device, and can be called directly from the memory unit during the next access, thus enhancing the access speed.

The described remote controller also includes font/Chinese character input keys, for coordination with optional keys on the television screen and the remote controller screen, to input English numerals and Chinese.

For example, if the screen display is as shown in Figure 4, when the cursor is moved to the "Domestic Website" and the "Confirmation" key is pressed down, the screen displayed in Figure 5 appears. At this time, if the remote controller is operated, and the cursor is moved to "Education" and the "Confirmation" key is pressed down, then, the screen displayed in Figure 6 appears. Then, if through operating the remote controller, the cursor is moved to "Young Children Education" and the "Confirmation" key is pressed down, the screen of address selection displayed in Figure 7 appears, and if "Beijing" is then selected, the home page of the website displayed in Figure 8 appears.

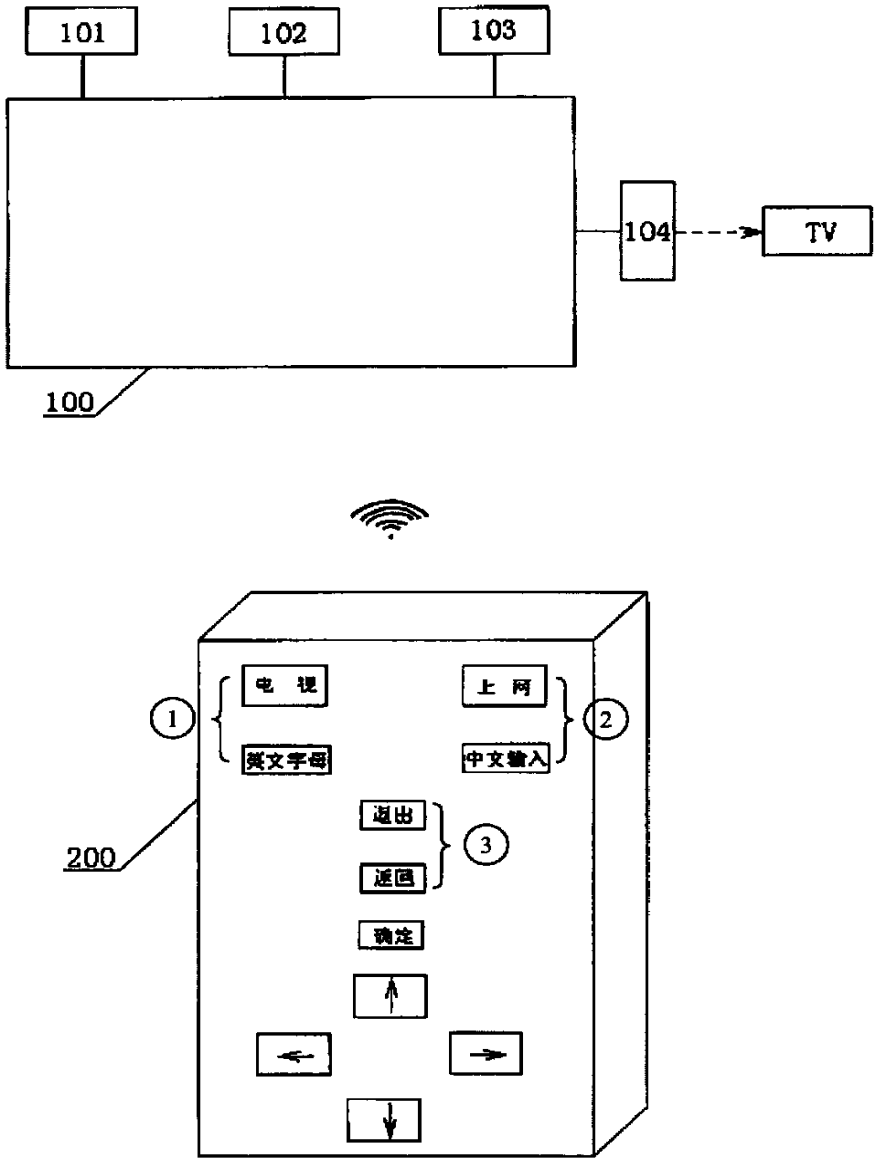


Figure 1

Key: 1 Television
English alphabet
2 Getting on-line
Chinese input
3 Exit
Return
Confirmation

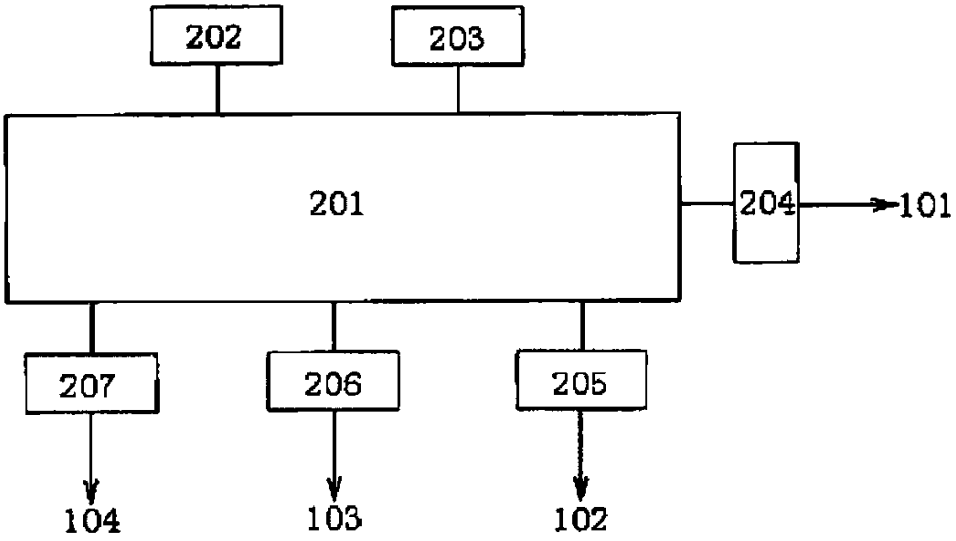


Figure 2

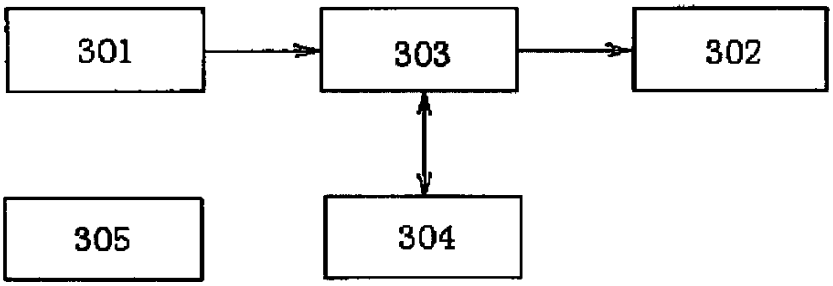


Figure 3

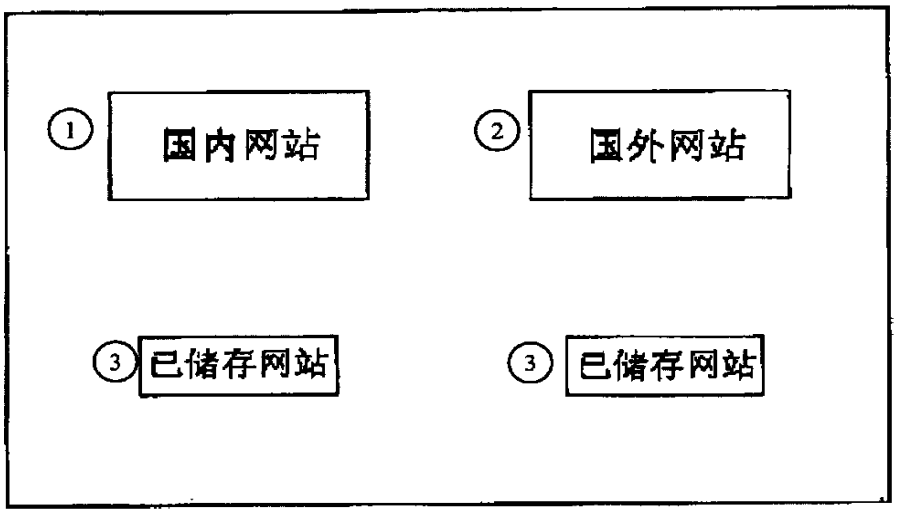


Figure 4

Key: 1 Domestic website
2 Foreign website
3 Stored website

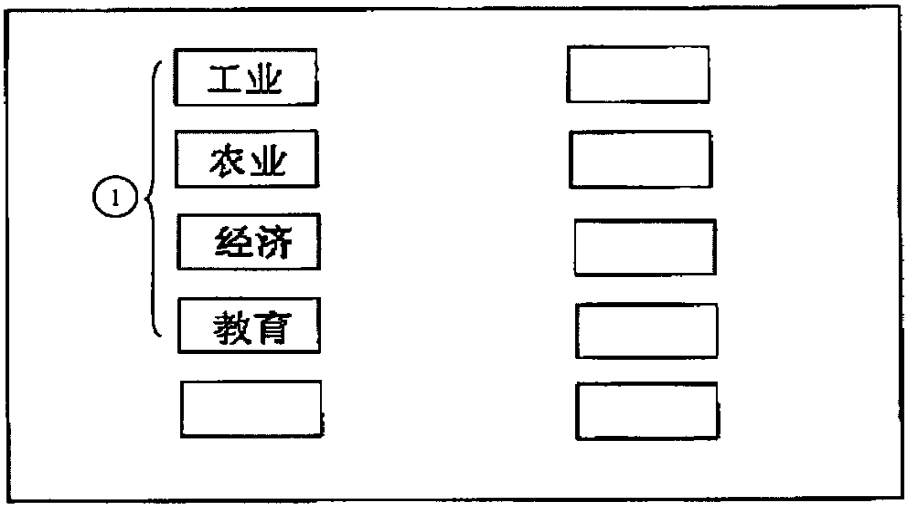


Figure 5

Key: 1 Industry
Agriculture
Economy
Education

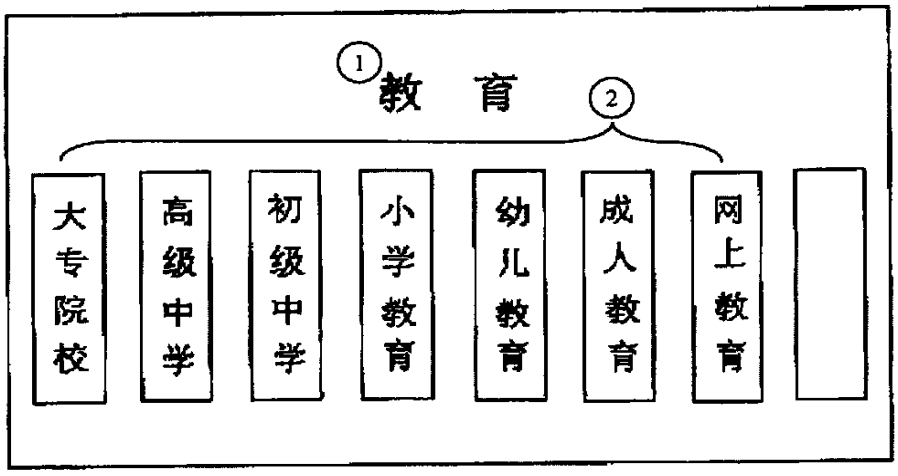


Figure 6

Key: 1 Education
2 Universities and colleges
High schools
Middle schools
Elementary schools
Young Children's education
Adult education
On-line education

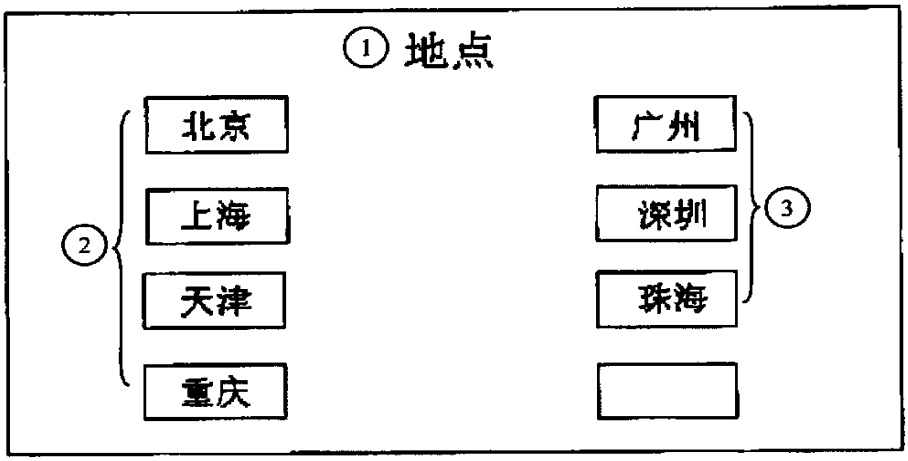


Figure 7

Key: 1 Sites
2 Beijing
Shanghai
Tianjin
Chongqing
3 Guangzhou
Shenzhen
Zhuhai

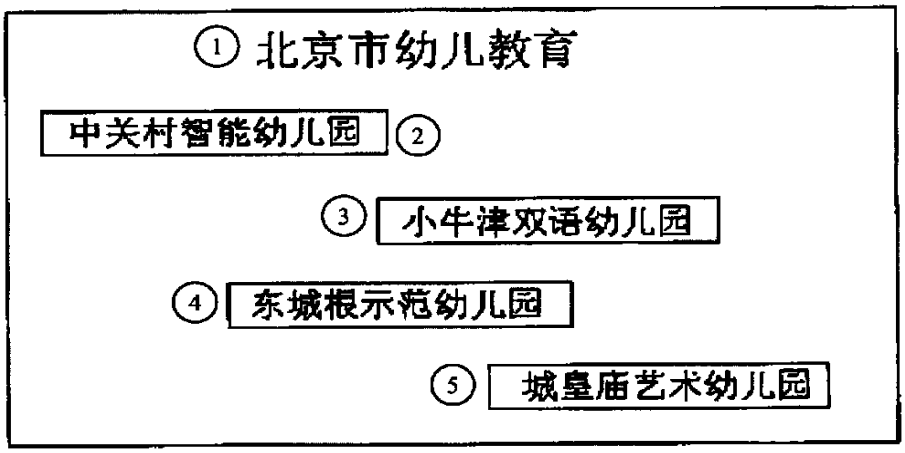


Figure 8

Key: 1 Young Children's Education in Beijing
2 Intelligent Kindergarten at Zhongguancun
3 Little Oxford Bilingual Kindergarten
4 Dongchenggen Exemplary Kindergarten
5 Chenghuangmiao Kindergarten of Arts